

1 We claim:

1 1. A vehicle washing system comprising:

2 a frame;

3 a moveable platform having a left end and a right end, the moveable platform being (i)
4 capable of vertical movement relative to the frame, (ii) suspended from above the
5 frame generally proximate one end, and (iii) supported from below the frame
6 generally proximate an opposite end; and

7 one or more nozzles, the one or more nozzles operatively coupled to the movable
8 platform.

1 2. The vehicle washing system of claim 1, wherein the one or more nozzles are operatively
2 coupled to the moveable platform by way of one or more wands, the one or more wands
3 being moveably coupled with the movable platform.

1 3. The vehicle washing system of claim 1, further comprising:

2 a non-extensible, flexible, elongated member having a first end, a second end, the
3 elongated member being slideably coupled to the frame;
4 wherein the movable platform is suspended proximate said one end by the first end and
5 is connected to the second end proximate said opposite end.

1 4. The vehicle washing system of claim 3, wherein the elongated member comprises a chain.

1 5. The vehicle washing system of claim 3, wherein the elongated member comprises a belt.

1 6. The vehicle washing system of claim 3, wherein the elongated member comprises a cable.

1 7. The vehicle washing system of claim 3, wherein the elongated member is slideably connected
2 with the frame by way of one or more pulleys.

1 8. The vehicle washing system of claim 7, wherein the frame has an inverted U-shape and
2 comprises a left leg, a right leg, and a top side, the top side spanning the distance between
3 the right and left legs.

1 9. The vehicle washing system of claim 8, wherein a portion of the elongated member between
2 the first and second ends has a portion length, the portion length being generally
3 coextensive with the length of the top side.

1 10. The vehicle washing system of claim 8, wherein the elongated member extends vertically
2 from the first end through a first pulley located in a top section of the left leg, along the
3 top side in a generally horizontal orientation, through a second pulley located in a top
4 section of the right leg, vertically downward to a third pulley at a base of the right leg,
5 and vertically upward to the second end.

1 11. The vehicle washing system of claim 8, further including means for moving the frame
2 linearly relative to a vehicle, the inverted U-shaped frame passing over the vehicle.

1 12. The vehicle washing system of claim 1, wherein said opposite end is supported by a lift
2 actuator, the lift actuator being capable of vertical movement.

1 13. The vehicle washing system of claim 12, wherein the lift actuator comprises a pneumatic
2 cylinder.

1 14. The vehicle washing system of claim 13, further comprising:

2 (i) a pressurized air tank, the pressurized air tank pneumatically coupled to the lift
3 actuator through a pneumatic switch; and
4 (ii) an air compressor pneumatically coupled to the lift actuator;
5 wherein upon a power interruption to the air compressor, the pneumatic switch opens to
6 cause pressurized air to flow from the air tank to the lift actuator, raising the moveable
7 platform vertically upwardly.

1 15. The vehicle washing system of claim 1, wherein the moveable platform further comprises:

2 a left bracket suspended within the frame;
3 a right bracket supported within the frame;
4 a reciprocating pivotal actuator fixedly attached to the right bracket, the reciprocating
5 pivotal actuator having a reciprocating shaft;
6 a boom having an axis and right and left boom ends, the left boom end being rotateably
7 attached to the left bracket, and the right boom end being attached to the
8 reciprocating shaft.

1 16. The vehicle washing system of claim 15, wherein the reciprocating pivotal actuator is

2 pneumatically powered.

1 17. The vehicle washing system of claim 1, further comprising:

2 one or more vertically orientated guide rails attached to the frame;
3 one or more guide members coupled to said moveable platform, each guide member
4 being in slidable communication with the at least one of the one or more vertically
5 orientated guide rails, wherein lateral movement of the moveable platform is
6 minimized.

1 18. The vehicle washing system of claim 2, wherein the nozzles are 0-degree nozzles and the one
2 or more wands rotate relative to the moveable platform.

1 19. The vehicle washing system of claim 2, wherein the nozzles are turbo nozzles and the one or
2 more wands reciprocate relative to the moveable platform.

1 20. The vehicle washing system of claim 15, wherein the reciprocating pivotal actuator is
2 configured to selectively rotate the boom to a plurality of angularly related positions and
3 hold the boom in anyone of the plurality of positions.

21. The vehicle washing system of claim 15, wherein the reciprocating pivotal actuator selectively applies a clockwise or counterclockwise bias to the boom, and the moveable platform further comprises:

a follower arm, the follower arm including (i) a proximal end fixedly attached to the boom, (ii) a distal end radially and downwardly disposed from the boom, and (iii) left and right sides, the left and right sides spaced apart by a follower arm width;

a rear frame member attached with the frame having a first guide face, the first guide face having (a) an first upper section, the first upper section being substantially vertically orientated, and (b) a first lower section, the first lower section diverging from the first upper section at a first acute angle along a plane substantially perpendicular to the boom axis; and

a front frame member attached with the frame having a second guide face, the second guide face having (a) a second upper section, the second upper section being substantially vertically orientated and spaced from the first upper section a distance slightly greater than the follower arm width, and (b) a second lower

16 section, the second lower section diverging from the second upper section at a
17 second acute angle along a plane substantially perpendicular to the boom axis, the
18 second acute angle extending in a direction opposite the first acute angle;
19 wherein the boom is held in a nominal pivotal orientation when the left and right sides are
20 constrained between the first and second upper sections, and the boom is
21 encouraged to a predetermined clockwise or counterclockwise orientation
22 depending on the actuator bias as the follower arm is lowered between the first
23 and second lower sections.

1 22. The vehicle wash system of claim 2 wherein at least one of the one or more nozzles is a slow
2 rotating turbo nozzle, wherein a spiraling jet of fluid emanating from the slow rotating
3 turbo nozzle has a rotational speed of less than approximately 1400 revolutions per

4 minute.

1 23. The vehicle wash system of claim 2 wherein at least one of the one or more nozzles is a
2 oscillating nozzle, wherein a jet of fluid emanating from the oscillating turbo nozzle moves back
3 and forth in a generally linear path.

1 24. A vehicle washing system comprising:
2 a framework;
3 a platform vertically moveably attached to the framework, the platform including,
4 (i) a left bracket in the framework for attachment to a first end of the moveable
5 platform,
6 (ii) a right bracket in the framework for attachment to a second end of the
7 moveable platform,

- (iii) a reciprocating pivotal actuator fixedly attached to one of said left and right brackets, the reciprocating pivotal actuator having a shaft,
- (iv) a boom having left and right boom ends and a longitudinal axis, the boom rotateably attached to the left or right bracket at one boom end, and coupled with the shaft at the other boom end, whereby the boom can be pivoted about the longitudinal axis relative to the left and right brackets, and
- (v) one or more nozzles operatively coupled to the boom, wherein the pivotal movement of the boom changes the angular direction of a stream of fluid emitted from each nozzle.

25. The vehicle washing system of claim 24, wherein the one or more nozzles are operatively coupled to the boom by way of one or more wand assemblies, each wand assembly comprising:

an attachment member having a stationary section and a rotary section, the stationary section being fixedly attached to the boom;

a rotating manifold rotateably coupled to the rotary section;

one or more wands radially disposed on the rotating manifold;

one or more nozzles attached to a distal end of each wand of the one or more wands; and

a motor, the motor having a shaft, the shaft being coupled with the rotating manifold.

1 26. The vehicle washing system of claim 25, wherein the shaft is coupled with the rotating
2 manifold by way of a gear assembly.

1 27. The vehicle washing system of claim 25, wherein the interior of each of the one or more
2 wands is hollow and adapted to facilitate fluid flow therein.

1 28. The vehicle washing system of claim 25, wherein the one or more nozzles are 0-degree
2 nozzles.

1 29. The vehicle washing system of claim 24, wherein the one or more nozzles are operatively
2 coupled to the boom by way of a wand assembly, the wand assembly comprising:
3 at least one hollow elongated wand, the elongated wand being reciprocally mounted on
4 the boom;

5 one or more nozzles mounted on the elongated wand, the one or more nozzles being in
6 fluid communication with the elongated wand;

7 a motor assembly fixedly mounted with the boom, the motor assembly having an output
8 shaft;

9 a crank member secured to the output shaft for unitary rotation therewith; and
10 linkage coupled with the elongated wand at a first location and with the crank member at
11 a second location to reciprocate the elongated wand about an axis generally
12 perpendicular to the length of the elongated wand.

1 30. The vehicle washing system of claim 29, wherein the one or more nozzles are each adapted
2 to emit a stream of liquid that rotates in a conical pattern.

1 31. The vehicle washing system of claim 24, further comprising:

2 a pair of guide members, one guide member located proximate said one boom end and
3 the other guide member located proximate said other boom end, each guide
4 member including;
5 a front guide surface,
6 a rear guide surface, the front and rear surfaces being parallel and spaced a first
7 distance from each other, and
8 a bore; and
9 two pair of front and rear vertical guide rails, such pair of vertical guide rails being
10 affixed to either a left or right side of the framework, each pair of the front and
11 rear guide rails being spaced apart a second distance generally equivalent to the
12 first distance
13 wherein (i) the front guide surface of each guide member slides against a respective front
14 vertical guide rail, (ii) the rear guide surface of each guide member slides against
15 a respective rear vertical guide rail, and the boom passes through the bore of each
16 guide member.

1 32. The vehicle washing system of claim 24, further comprising one or more sensors, the sensors
2 attached to the platform and configured to detect one or more rotational positions of the
3 boom.

1 33. The vehicle washing system of claim 24, further comprising a mechanical stop attached to
2 the platform, the mechanical stop preventing the boom from rotating clockwise or
3 counterclockwise in excess of approximately 90 degrees from a nominal position, the
4 nominal position being the angular orientation of the boom wherein the nozzles are
5 facing vertically downwardly.

1 34. The vehicle washing system of claim 24, wherein the reciprocating pivotal actuator is
2 configured to selectively rotate the boom to a plurality of angular orientations and hold
3 the boom in anyone of the plurality of angular orientations.

1 35. The vehicle washing system of claim 24, wherein the reciprocating pivotal actuator
2 selectively applies a clockwise or counterclockwise bias to the boom, and the platform
3 further comprises:
4 a follower arm, the follower arm including (i) a proximal end fixedly attached to the
5 boom, (ii) a distal end radially and downwardly disposed from the boom, and (iii)
6 left and right sides, the left and right sides spaced apart by a follower arm width;
7 a rear frame member attached with the framework having a first guide face, the first
8 guide face having (a) an first upper section, the first upper section being
9 substantially vertically orientated, and (b) a first lower section, the first lower
0 section diverging from the first upper section at a first acute angle along a plane
1 substantially perpendicular to the boom axis; and
2 a front frame member attached with the framework having a second guide face, the
3 second guide face having (a) a second upper section, the second upper section
4 being substantially vertically orientated and spaced from the first upper section a
5 distance slightly greater than the follower arm width, and (b) a second lower
6 section, the second lower section diverging from the second upper section at a
7 second acute angle along a plane substantially perpendicular to the boom axis, the
8 second acute angle extending in a direction opposite the first acute angle;
9 wherein the boom is held in a nominal angular orientation when the left and right sides
0 are constrained between the first and second upper sections, and the boom is

21 encouraged to a predetermined clockwise or counterclockwise displaced angular
22 orientation depending on the actuator bias as the follower arm is lowered between
23 the first and second lower sections.

1 36. The vehicle washing system of claim 24, wherein the right bracket is attached to a moveable
2 portion of a vertically disposed linear actuator, a non-moveable portion of the linear
3 actuator being attached with the frame.

1 37. The vehicle washing system of claim 36, wherein the non-moveable portion of the linear
2 actuator is affixed to a base of the framework, below the moveable platform.

38. The vehicle washing system of claim 36, further comprising:
a flexible, non-extensible, elongated member having a two ends, one end of the elongated member being attached to the left bracket and the other end being attached to the right bracket, a portion of the elongated member located between the two ends being slide-ably coupled with the framework;
wherein the first end of the moveable platform is suspended from the elongated member.

1 39. The vehicle wash system of claim 24, wherein at least one of the one or more nozzles is a
2 slow rotating turbo nozzle, wherein a spiraling jet of fluid emanating from the slow
3 rotating turbo nozzle has a rotational speed of less than approximately 1400 revolutions
4 per minute.

1 40. The vehicle wash system of claim 24, wherein at least one of the one or more nozzles is a
2 oscillating nozzle, wherein a jet of fluid emanating from the oscillating turbo nozzle
3 moves back and forth in a generally linear path.

1 41. A gantry-type vehicle washing system comprising:

2 an inverted U-shaped frame member including a left leg with a left inside surface, a right

3 leg with a right inside surface, and a top section spanning the left and right legs,

4 the top section having a top inside surface;

5 a vertically orientated lift actuator contained in one of said left and right legs;

6 an elongated platform having a first end and a second end; the first end operatively

7 attached to the lift actuator, the first end including a first connector and the second

8 end including a second connector; and

9 a flexible, non-extensible, elongated member having a first elongated member end and a

10 second elongated member end,

11 the second elongated member end attached to the second connector,

12 the elongated member being slideably coupled with the top section of the

13 frame permitting lengthwise movement,

14 the first elongated member end being attached to the first connector,

15 wherein the second end of the elongated platform is suspended from the

16 elongated member.

1 42. The gantry-type vehicle washing system of claim 41, further comprising:

2 one or more vertically orientated guide-rails disposed in either the left or right legs;

3 one or more guide members coupled to the elongated platform, each guide member in

4 slidable engagement with the at least one of the one or more vertically orientated

5 guide rails, wherein lateral movement of the elongated platform is minimized.

1 43. The gantry-type vehicle washing system of claim 41, wherein the lift actuator is pneumatic,
2 and is in pneumatic communication with a compressor.

1 44. The gantry-type vehicle washing system of claim 43, further comprising:

2 a pressurized air tank coupled with the pneumatic lift actuator by way of one or more air

3 hoses, the one or more air hoses interceded by a pneumatic safety switch;

4 wherein the pneumatic safety switch is configured to (i) prevent air flow between the air

5 tank and the lift actuator through said one or more hoses when power is supplied

6 to the compressor, and (ii) permit air flow through said one or more hoses when

7 power to the compressor is interrupted, causing the lift actuator to raise the

8 elongated platform.

45. The gantry-type vehicle washing system of claim 41, wherein the elongated platform further comprises:

(i) a first bracket for attaching said first end of the elongated platform with the framework,

(ii) a second bracket for attaching said second end of the elongated platform with the framework,

(iii) a reciprocating pivotal actuator fixedly attached to the first bracket, the reciprocating pivotal actuator having a shaft,

(iv) a boom having two boom ends and a longitudinal axis, the boom being pivotally attached to the first bracket at one boom end, and coupled with the shaft at the other boom end, whereby the boom can be pivoted about the longitudinal axis relative to the first and second brackets, and

13 (v) one or more nozzles operatively coupled to the boom, each having a discharge
14 opening capable of emitting a stream of fluid, whereby the pivotal movement of
15 the boom changes the angular direction of the stream of fluid emitted from each
16 nozzle.

1 46. The gantry-type vehicle washing system of claim 41, wherein the one or more nozzles are
2 operatively coupled to the boom by way of one or more wand assemblies, each wand
3 assembly comprising:

4 an attachment member having a stationary section and a rotary section, the stationary
5 section being fixedly attached to the boom;
6 a rotating manifold rotateably coupled to the rotary section;
7 one or more wands disposed on the rotating manifold;
8 one or more nozzles attached to a distal end of each wand of the one or more wands; and
9 a motor, the motor having a shaft, the shaft being coupled with the rotating manifold.

1 47. The gantry-type vehicle washing system of claim 41, further comprising:

2 a first low pressure fluid delivery conduit substantially spanning the top section from the
3 left leg to the right leg, the first low pressure fluid delivery conduit adjacent to the
4 top inside surface;
5 a first fluid delivery system in fluid communication with the first low pressure fluid
6 delivery conduit for pumping a first fluid through the first low pressure fluid
7 delivery conduit; and
8 a first set of generally downward facing nozzles coupled in fluid communication with the
9 first low pressure fluid delivery conduit.

1 48. A method of operating a gantry-type automobile wash, the method comprising:

2 positioning the automobile wash gantry over a front section of a hood of an automobile,

3 the gantry including a inverted U-shaped framework, the inverted U-shaped

4 framework having (1) a left leg with a left inside surface, (2) a right leg with a

5 right inside surface, (3) a top section spanning the left and right legs and (4) an

6 elongated overhead cleaning platform spanning the distance between the left and

7 right inside surfaces, the elongated platform being vertically moveable and having

8 a pivoting portion capable of clockwise and counterclockwise pivotal movement,

9 the pivoting portion having a plurality of nozzles coupled therewith;

10 lowering the platform until the nozzles are at a first predetermined distance from the

11 surface of the hood;

12 spraying jets of fluid substantially perpendicular to the surface of the hood from the

13 plurality of nozzles while simultaneously moving the gantry toward the rear of the

14 hood;

15 as the gantry begins to pass over a windshield surface of the automobile, rotating the

16 pivoting portion until the plurality of nozzles directly face the windshield surface;

17 simultaneously spraying jets of fluid substantially perpendicular to the surface of the

18 windshield from the plurality of nozzles while simultaneously moving the gantry

19 towards the top rear of the windshield, and raising the platform to maintain a

20 second predetermined distance between the nozzles and the windshield;

21 as the gantry begins to pass over a roof surface of the automobile, rotating the pivoting

22 portion until the plurality of nozzles directly face the roof surface; and

23 spraying jets of fluid substantially perpendicular to the roof surface from the plurality of
24 nozzles while simultaneously moving the gantry toward the rear of the roof.

1 49. The method of claim 48, wherein the plurality of nozzles are coupled to the platform by way
2 of one or more pivoting wands.

1 50. The method of claim 48, further comprising:
2 determining the profile of the automobile by utilizing sensors arranged on the inside
3 surfaces of the left and right legs.

1 51. A vehicle washing system comprising:
2 an inverted U-shaped frame member, the frame member including left and right legs and
3 a top section connecting the left and right legs, the top section having an inside
4 face;
5 a first low pressure fluid delivery conduit substantially spanning the top section from the
6 left leg to the right leg, the first low pressure fluid delivery conduit being adjacent
7 to the inside face;
8 a first fluid delivery system in fluid communication with the first low pressure fluid
9 delivery conduit for pumping a first fluid through the first low pressure fluid
10 delivery conduit;
11 a first set of generally downwardly facing nozzles coupled in fluid communication with
12 the first low pressure fluid delivery conduit.

1 52. The vehicle washing system of claim 51, further comprising:
2 a second low pressure delivery conduit substantially spanning the top section from the
3 left leg to the right leg;

4 a second fluid delivery system in fluid communication with the second low pressure fluid
5 delivery conduit for pumping a second fluid through the second low pressure fluid
6 delivery conduit;
7 a second set of generally downwardly facing nozzles coupled in fluid communication
8 with the second low pressure fluid delivery conduit.

1 53. The vehicle washing system of claim 52, wherein one or more nozzles of either the first or
2 second set of generally downwardly facing nozzles are located proximate the intersection
3 between the left leg and the top section or the right leg and the top section, and the one or
4 more nozzles face slightly inwardly.

1 54. The vehicle washing system of claim 52, wherein the first fluid and the second fluid are
2 different from each other.

1 55. The vehicle washing system of claim 54, wherein one fluid of the first and second fluids is a
2 wax solution and the other fluid is a spot free rinse solution.

1 56. A method of washing a vehicle utilizing a gantry style vehicle wash system, a vehicle wash
2 including (i) an application of a presoak solution to substantially cover the front, rear,
3 side and top surfaces of a vehicle and (ii) a wash cycle to rinse substantially all of the
4 front, rear, top and side surfaces with a high pressure cleaning solution, wherein the
5 gantry is moveable from a forward position in front of a vehicle to a rear position that is
6 behind the vehicle, the movement of the gantry over and around the vehicle from either a
7 forward or rear position to the other position defining a pass, the method comprising
8 washing a vehicle in three or fewer passes.

1 57. The method of claim 56, wherein a one pass of the application of a presoak solution, and
2 another pass of the three or fewer passes comprises a high pressure wash cycle.

1 58. The method of claim 57, wherein a third pass of the three or fewer passes comprises a dwell
2 cycle.

1 59. The method of claim 57, further comprising an additional pass after the three of fewer passes,
2 wherein a clear coat or drying agent is applied to the vehicle.

1 60. The method of claim 57, further comprising an additional pass after the three of fewer
2 passes, wherein a spot free rinse or a soft water rinse is applied to the vehicle.

1 61. The method of claim 57, further comprising an additional pass after the three of fewer passes,
2 wherein both a clear coat and a spot free rinse are applied to the vehicle.

1 62. A vehicle wash system comprising:

2 a framework; and
3 one or more slow rotating turbo nozzles attached to the framework, each of the one or
4 more slow rotating turbo nozzles configured for emitting a spiraling fluid jet
5 having a rotational rate of less than approximately 1400 revolutions per minute
6 (rpm).

1 63. The vehicle wash system of claim 62, wherein each of the one or more slow rotating turbo
2 nozzles are configured for emitting a spiraling fluid jet having a rotational rate of less
3 than approximately 1400 revolutions per minute (rpm).

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1 64. The vehicle wash system of claim 62, wherein the framework further comprises an inverted
2 u-shaped gantry, the gantry including right and left legs and a top span extending
3 between the legs.

1 65. The vehicle wash system of claim 64, wherein the top span has one or more rotating or
2 reciprocating members pivotally attached thereto, at least one of the one or more slow
3 rotating turbo nozzles connected with the rotating or reciprocating members and in fluid
4 communication with a supply of cleaning solution.

1 66. The vehicle wash system of claim 65, wherein the rotating or reciprocating members are
2 wands.

1 67. The vehicle wash system of claim 65, wherein the top span includes a vertically movable
2 platform, the movable platform having at least one of the one or more slow rotating turbo
3 nozzles connected with thereto, the one or more slow rotating turbo nozzles being in fluid
4 communication with a supply of cleaning solution.

1 68. The vehicle wash system of claim 65, wherein at least one of the plurality of slow rotating
2 turbo nozzles is attached to either the left or right legs.

1 69. A vehicle wash system comprising:
2 a framework; and
3 one or more oscillating nozzles attached to the framework, each of the one or more
4 oscillating nozzles configured for emitting a fluid jet having a generally linear
5 path.

1 70. The vehicle wash system of claim 69, wherein the framework further comprises an inverted
2 u-shaped gantry, the gantry including right and left legs and a top span extending
3 between the legs.

1 71. The vehicle wash system of claim 70, wherein the top span has one or more rotating or
2 reciprocating members pivotally attached thereto, at least one of the one or more
3 oscillating nozzles connected with the rotating or reciprocating members and in fluid
4 communication with a supply of cleaning solution.

1 72. The vehicle wash system of claim 70, wherein the top span includes a vertically movable
2 platform, the movable platform having at least one of the one or more oscillating nozzles
3 connected with thereto, the one or more oscillating nozzles being in fluid communication
4 with a supply of cleaning solution.

1 73. The vehicle wash system of claim 70, wherein at least one of the plurality of oscillating
2 nozzles is attached to either the left or right legs.

1 74. A high pressure nozzle for use in a vehicle wash system comprising:
2 a nozzle body having a hollow interior;
3 a connector attached to the nozzle body for fluidly coupling to a high pressure fluid
4 source;
5 one or more fluid passageways extending from the connector into the hollow interior, the
6 one or more fluid passageways being configured to induce a fluid vortex with a
7 rotational velocity not to exceed approximately 1400 revolutions per minute in
8 the hollow interior when in operation;

9 a nozzle member including a nozzle orifice, the nozzle member being substantially
10 contained within the hollow interior for rotation substantially in unison with the
11 fluid vortex during operation

1 75. The nozzle of claim 74, wherein the one or more fluid passageways are configured to induce
2 the fluid vortex with a rotational velocity not to exceed approximately 1400 revolutions
3 per minute in the hollow interior when in operation.

1 76. A vehicle washing system comprising:

2 a framework, the frame work including a vertical leg; and
3 a plurality of high pressure nozzles in fluid communication with a source of cleaning
4 solution vertically spaced in relation to each other along at least a portion of the
5 vertical leg, the plurality of high pressure nozzles further including a first and
6 second set of one or more nozzles, the first set being attached to the vertical leg
7 generally below the second set;

8 an automated control system for directing the operation of the vehicle washing system;
9 and

10 one or more automated valves for turning on and off the flow of cleaning solution to
11 either or both the first and second set of valves responsive to a signal from the
12 control system, wherein the first and second set of nozzles can be operated
13 simultaneously or the first set of nozzles can be operated independent of the
14 second set of nozzles.

1 77. The vehicle washing system of claim 76, wherein the first and second set of nozzles are
2 fluidly connected in series with the cleaning solution source with the one or more

3 automated valves comprising a single automated valve intervening between the fluid
4 connection of the first and second sets.

1 78. The vehicle washing system of claim 76, wherein the one or more automated valves are
2 actuated by solenoids.

1 79. The vehicle washing system of claim 76, wherein the plurality of nozzles are slow rotating
2 turbo nozzles.

1 80. The vehicle washing system of claim 76, wherein the plurality of nozzles are oscillating
2 nozzles.

1 81. The vehicle washing system of claim 76, wherein the framework comprises an inverted u-
2 shaped gantry having a left and right leg with a top span extending there between, and the
3 vertical leg comprises either the left or right leg of the gantry.

1 82. A method of washing the sides of a vehicle using a gantry type vehicle washing system, the
2 method comprising:
3 moving a gantry along a path relatively parallel to a side of the vehicle;
4 determining the relative positions of (i) a front end of the vehicle, (ii) a rear end of the
5 vehicle, (iii) a portion of the vehicle extending higher than a preset distance above
6 ground using a control system interfaced with a plurality of sensors;
7 activating a first set of one or more high pressure nozzles to spray cleaning solution when
8 the gantry moves between the front end and rear end of the vehicle during a wash
9 cycle, the first set of nozzles being located on the gantry generally vertically
10 positioned between the ground and the preset distance;

11 activating a second set of one or more high pressure nozzles to spray cleaning solution
12 when the gantry moves alongside the portion of the vehicle extending higher than
13 the preset distance during the wash cycle, the second set of nozzles being located
14 on the gantry generally vertically positioned above the preset distance;
15 deactivating the second set of one or more high pressure nozzles when the gantry moves
16 beyond the portion of the vehicle extending higher than the preset distance during
17 the wash cycle; and
18 deactivating both the first and second set of one or more high pressure nozzles when the
19 gantry moves in front of the front end of the vehicle or behind the rear end of the
20 vehicle.

21 83. The method of claim 82, wherein activating the first or second set of high pressure nozzles
22 comprises permitting a flow of cleaning solution to into the first or second set of high
23 pressure nozzles.

24 84. The method of claim 83, wherein deactivating the first or second set of high pressure nozzles
25 comprises preventing the flow of cleaning solution into the first or second set of high
26 pressure nozzles.

27 85. The method of claim 83, wherein the flow of cleaning solution to either the first set or second
28 set of high pressure nozzles is controlled by one or more solenoid valves.

29 86. The method of claim 82, wherein first set of nozzles primarily sprays fluid jets at the side
30 surfaces of a vehicle positioned vertically below a hood or top surface of a trunk, and the
31 second set of nozzles primarily sprays fluid jets at the side surfaces of a vehicle
32 positioned vertically above the hood or the top surface of the trunk.

1 87. The method of claim 82, wherein said determining the relative positions of the vehicle occurs
2 during a first pass of the gantry along the vehicle, and said activating and deactivating of
3 the first and second set of nozzles occurs during a subsequent pass of the gantry along
4 side the vehicle, a pass comprising movement of the gantry from either the front or rear
5 end of the vehicle to the other of the front or rear end.

1 88. A washing system for a vehicle:
2 a wash bay floor;
3 a left front tire stop located on the wash bay floor, the left front tire stop having an inside
4 edge and an outside edge;
5 a right front tire stop located on the wash bay floor spaced from the left front tire stop,
6 the right front tire stop having an inside edge and an outside edge, the right front
7 tire stop inside edge facing and being generally parallel to the left front tire stop
8 inside edge;
9 a right and left outer guide member attached to the floor, each outer guide member
10 having a section proximate and angled inwardly towards the outside edges of the
11 respective front tire stop;
12 an inner guide member attached to the floor, the inner guide member having (i) a left
13 section angled outwardly generally towards the inside edge of the left tire stop,
14 and (ii) a right section angled outwardly generally towards the inside edge of the
15 right tire stop; and
16 a framework, the framework having one or more nozzles attached to the framework, each
17 of the one or more nozzles configured for emitting a jet of cleaning solution.